Fe-based cerametallic friction pads for clutch plates of heavy vehicles

Overview
Sintered Fe-Cu based cerametallic friction materials/pads for clutch and brakes of commercial heavy vehicles like trucks and tractors are presently being imported. These friction pads are riveted to steel back plates and fixed to the carrier plates before assembling in the clutch housing. The life of the friction pad is limited to the depth of the rivet; limiting 100% utilisation of the friction material/pad and with usage, the failure is initiated along the rivet hole. Further, rigid bonding introduces a little discomfort arising out of judder while driving. The project involves innovative methods of replacing riveted clutch buttons with bonding of friction cookies directly onto the clutch plate, dispensing with the requirement of the additional steel back plate. A patented technology with reduced number of processing steps with compositional change and indigenous equipment design has been developed to increase driving comfort along with increased life of clutch system.

Key Features
- Use of non carcinogenic materials
- Improved wear and coefficient of friction
- Fe-based sintered pad
- Flexibility of single or dual sintered friction pads
- Indigenous equipment for processing
- Reduced post sintering operations
- Production level manufacturing process

Potential Applications
- Clutch and brakes of heavy commercial vehicles
- Aircraft brakes
- Passenger vehicles like buses
- Wind mill applications
- Railways
- Military tanks

Intellectual Property Development Indices (IPDI)
- Performance and stability are validated at laboratory scale
- Prototype level demonstrated
- Scale up design of equipment and technology available

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Major Patents / Publications